

NEW RUBIACEAE FROM VENEZUELA

JULIAN A. STEYERMARK¹

ABSTRACT

Four new species of Rubiaceae are described from Venezuela: three from Territorio Federal Amazonas (*Guettarda leiantha*, *Psychotria davidsae*, *Psychotria plowmanii*), and one from Estado Zulia (*Hillia zuliaensis*). One variety is described from Estado Yaracuy (*Psychotria aublettiana* var. *villipila*). These new taxa have resulted from a joint project of exploration in Venezuela under a grant to the Missouri Botanical Garden by the National Science Foundation and to the Division of Biological Investigations, National Park Institute, Herbario Nacional of Caracas, Venezuela by CONICIT (Consejo Nacional de Investigaciones Científicas y Tecnológicas).

Since 1977 the Missouri Botanical Garden, recipient of a grant from the National Science Foundation of the United States, and the Herbario Nacional of Venezuela, recipient of a similar grant from the equivalent organization of Venezuela (CONICIT), have been conducting joint botanical explorations into various portions of Venezuela to make inventories of the flora in those areas previously unexplored, especially where changes might be forthcoming due to the construction of dams, drainage projects, or agricultural and lumbering activities.

These explorations have resulted in a large number of additions to the known flora of Venezuela, as well as a considerable assemblage of undescribed taxa.

In the present paper a few taxa of undescribed Rubiaceae are presented.

Guettarda leiantha Steyermark., sp. nov. TYPE: Venezuela. Amazonas: along road between Paso El Diablo and Caño de Culebra, 25–30 km SE of Puerto Ayacucho, 100 m, 12 May 1980, Steyermark, Davidse & Guanchez 122318 (holotype, VEN; isotype, MO).

Arbor 5-metralis, ramis glabris; foliis petiolatis, petiolis 1–2 cm longis modice crispato-pilosis; laminis elliptico-ovatis apice acuminatis basi acutis 12–17 cm longis, 5.5–7.5 cm latis, subtus praeter axillas barbellatas atque nervos breviter crispato-villosulos glabris, supra costa media sparse vel modice adpresso-pilosula aliter glabris, nervis lateralibus utroque latere ca. 7 tenuibus adscendentibus ante marginem 3–4 mm anastomosantibus; inflorescentia semel dichotoma, quoque ramulo inflorescentiae 8–15-flora semel vel non nihil dichotoma; pedunculo tenui 4–5 cm longo, 0.5 mm lato modice minute crispato-pilosulo; floribus tetrameris; calyce hypanthioque 1.5 mm longis, hypanthio 1 mm longo, 0.8 mm lato glabro, lobis calycis

paullo inaequalibus suborbiculari-ovatis obtusis 0.3–0.4 mm longis, 0.3–0.4 mm latis sparsim ciliolatis; corolla tenuiter hypocrateriformis 10 mm longa, tubo 8 mm longo, 1 mm lato extus glabro intus basi annulo denso piloso instructo inde 5 mm sparsim piloso, lobis ovali-oblongis apice rotundatis 1.5 mm longis, 1.5 mm latis, uno vel duobus lobis parce crenulatis intus marginibus papillatis extus glabris; antheris linearibus 2.7 mm longis in parte tertia superiore insertis; stylo 9 mm longo glabro.

Tree 5 m tall, branches glabrous. Leaves petiolate, petioles 1–2 cm long, moderately crisp-pilose; leaf-blades elliptic-ovate, acuminate at apex, acute at base, 12–17 cm long, 5.5–7.5 cm wide, sparsely to moderately appressed-pilosulous above on midnerve, elsewhere glabrous, leaf axils beneath slightly barbellate, shortly crisp-villosulous on main and secondary nerves, glabrous on surface, lateral nerves ca. 7 each side, slender. Inflorescence with 2 primary axes either not forked or once-forked, each fork bearing 8–15 flowers; peduncle slender, 4–5 cm long, 0.5 mm thick, moderately minutely crisp-pilosulous; flowers tetramerous; calyx and hypanthium 1.5 mm long, hypanthium 1 mm long, 0.8 mm wide; calyx lobes slightly unequal, suborbicular-ovate, obtuse, 0.3–0.4 mm by 0.3–0.4 mm, sparsely ciliolate; corolla slenderly hypocrateriform, 10 mm long, the tube 8 mm long, 1 mm broad, glabrous without, sparsely pilose in the basal 5 mm within with a dense pilose ring at the very base, lobes oval-oblong, rounded at apex, 1.5 mm by 1.5 mm, glabrous without, papillate within on margins, 1 or 2 of the lobes inconspicuously crenulate; anthers linear, included, 2.7 mm long, inserted in the uppermost 1/3 of tube; filaments 0.5 mm long; style filiform, 9 mm long, glabrous; fruit not seen.

¹ Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166.

This taxon is allied to *G. acreana* Krause and *G. ulei* Krause, from which it may be distinguished by the completely glabrous exterior of the corolla, glabrous hypanthium, inflorescence with only two slender primary axes either once or not at all forked, and glabrous lower surface of the leaf blade.

Hillia zuliaensis Steyermark., sp. nov. TYPE: Venezuela. Zulia: Mara, vicinity of Río Guasare, between Rancho 505 and Cerro Yolanda, 10°53'-56'N, 72°26'-28'W, 200-270 m, 29 May 1980, Steyermark, Davidse & Stoddart 122876 (holotype, VEN; isotype, MO). PARATYPE: Venezuela. Zulia: Cerro Los Manantiales, forested uppermost slopes and ridges, E of Río Guasare, W of Hacienda Los Manantiales on property of Professor Morales, 12 km W of Corpozulia Campamento Carichuano, 11°1'N, 72°20'30"W, 600 m, 3 June 1980, Steyermark, Davidse & Stoddart 123255 (MO, VEN).

Planta epiphytica lignosa omnino glabra; stipulis caducis late obovatis acutis striatis 15 mm longis, 7 mm latis; foliis breviter petiolatis, petiolis 1-5 mm longis; laminis coriaceis late ovatis vel oblongo-ovatis apice abrupte acutis basi rotundatis vel late obtusis 9-12 cm longis, 5-7 cm latis pinnati-nerviis, nervis lateralibus utroque latere 7-8 prominulis adscendentibus ante marginem 1-3 mm anastomosantibus, venulis tertiaris laxe subreticulatis; floribus solitariis terminalibus sessilibus; calyce gamosepalo profunde campanulato inaequaliter 6-fisso, lobis lanceolatis vel triangulari-lanceolatis acutis 3-15 mm longis, 3-8 mm latis, tubo intus squamellis dentiformibus numerosis munito; corolla (immatura) subcampanulato-infundibuliformi 20 mm longa glabra (tubo 12 mm longo basi 3 mm lato orificio 9.5 mm lato, lobis quinque ligulatis apice rotundatis 9 mm longis, 4 mm latis); antheris quinque 10 mm longis, filamentis 2 mm longis; stylo 21 mm longo glabro; ovario subcylindrico anguste obconico 10-12 mm longo, 3-5 mm lato glabro.

Glabrous epiphyte. Stipules caducous, apical, broadly obovate, acute, 15 mm by 7 mm, striate. Leaves shortly petiolate, petioles 1-5 mm long; leaf blades coriaceous, broadly ovate to oblong-ovate, abruptly acute at apex, rounded to broadly obtuse at base, 9-12 cm long, 5-7 cm wide, pinnately nerved with 7-8 prominulous, ascending nerves on each side, anastomosing 1-3 mm from margin, tertiary venation loosely reticulate as seen through transmitted light. Flowers solitary, terminal, sessile. Calyx gamosepalous, 4 cm long, tube 2.6-3.2 cm long, deeply campanulate, unequally split into 6 lanceolate or triangular-lanceolate, acute lobes 3-15 mm long, 3-8 mm wide;

squamellae numerous within at base of tube, dentiform, 0.5 mm long. Corolla (immature) subcampanulate-infundibuliform, 20 mm long, the tube 12 mm long, 9.5 mm wide at summit, 3 mm wide below; lobes 5, ligulate-rounded and cucullate at apex, 9 mm long, 4 mm wide; stamens 5, included, attached halfway up tube; anthers 10 mm long; filaments 2 mm long; style 21 mm long, glabrous; ovary subcylindric, narrowly obconic, 10-12 mm long, 5 mm wide at apex, glabrous.

The new species differs from *H. costanensis* Steyermark., heretofore the single species of the group with spathiform calyx, in having a shorter calyx tube with longer calyx lobes.

Psychotria aubletiana Steyermark. var. *villipila*

Steyermark., var. nov. TYPE: Venezuela. Yaracuy: Sierra de Aroa, 15-20 km NW of Cocorote on road to Aroa, from 1 km SE of Los Cruceros to El Refugio, ca. 11 km W of San Felipe, 10°24'N, 68°51'W, 1,200-1,600 m, 5 Apr. 1980, Liesner & Gonzalez 10107 (holotype, VEN; isotype, MO). PARATYPE: Venezuela. Yaracuy: Sierra de Aroa, Cerro Negro, primary forest 8 km SW of San Felipe, 10°17'N, 69°01'W, 1,200-1,800 m, 1-2 Apr. 1980, Liesner & Gonzalez 9939 (MO, VEN).

Suffrutex 1-1.5-metralis, ramulis superne villosis pilis laxis munitis; stipulis in vaginis extus tomentosis connatis, vaginis dentibus lanceolatis acutis vel acuminatis 2.5-3.5 mm longis glabris ornatis; foliorum laminis costa media subtus laxe pilosa pilis laxe adscendentibus; inflorescentiis axillaribus terminalibusque; inflorescentiae bracteis involucralibus dimidio parte inferiore hirtello-villosis pilis patentibus 1-1.5 mm longis praeditis.

Suffruticose, 1-1.5 m tall, stems shortly appressed between nodes, hirtellous to villosulous below the inflorescences, stipules, and petiolar attachment, villous apically and on uppermost nodes. Stipular sheath 0.5-1 mm long, tomentose without, the teeth lanceolate, acute to acuminate, 2.5-3.5 mm long, 0.5-1 mm wide, glabrous. Leaves petiolate, petiole 3-10 mm long, densely hirtellous-pilosulous with loosely ascending hairs; leaf-blades lance-elliptic or elliptic-lanceolate, acuminate at apex, acute at base, 4.5-8.5 cm long, 1-2.7 cm wide, glabrous above, midrib below loosely pilose with ascending hairs, glabrous elsewhere; lateral nerves 8-9 each side, with finer intermediate nerves. Heads terminal and axillary, subhemispheric, 8-10 mm high, 13-

15 mm wide; involucre hirtellous-villous at base and in lower half with spreading hairs 1–1.5 mm long; floral bracts cucullate, pilosulous near apex and upper half, elsewhere glabrous; corolla tube and lobes glabrous.

This variety differs from *P. aubletiana* Steyermark var. *aubletiana* in the lanceolate, acute to acuminate stipular teeth, the loose pubescence of the upper portion of the stems, exterior portion of the involucre, similarly loose pubescence of the lower midrib, and in the terminal as well as axillary inflorescences. From *P. aubletiana* var. *producta* Steyermark, it differs in the shorter stipular teeth and villous pubescence of the lower midrib, while from var. *andina* Steyermark f. *pubescens* Steyermark, it is differentiated by the acute to acuminate stipular teeth and villous spreading pubescence. Because of the terminal as well as axillary inflorescences, future collections may well indicate specific status for this taxon.

Psychotria davidsae Steyermark, sp. nov. TYPE:

Venezuela. Amazonas: Atures, virgin rainforest along Río Cataniapo, on N side of river at dam site, 48 km SE of Puerto Ayacucho, 5°35'N, 67°15'W, 200–300 m, 10 May 1980, Steyermark, Davidse & Guanchez 122197 (holotype, VEN; isotype, MO).

PARATYPES: Venezuela. Amazonas: selva húmeda, a lo largo de la carretera, 10–30 km al este de Puerto Ayacucho hacia Gavilán, 5°35'N, 67°22'W, 120 m, 11 June 1977, Steyermark, Berry, Huber & Redmond 113893 (VEN). Bolívar: Sierra Pakaraima, frontera no. 10, 4°7'N, 65°43'W, 1,200 m, 2 May 1973, Steyermark, Gil, Quintero & F. José García 107206 (VEN).

Suffrutex 0.5-metralis, ramulis juvenilibus modice vel dense puberulis pilis brunneis brevibus munitis; stipulis in vaginam 1.5 mm longam, 3 mm latam modice puberulam connatis, utroque latere in dentes duos lanceolatos acuminatos 2–2.5 mm longos, 0.5–0.7 mm latos desinentibus; foliis oppositis petiolatis, petiolis 4–12 mm longis dense puberulis pilis brunneis munitis; laminis late ovatis vel elliptico-ovatis vel oblongo-ellipticis apice acutis basi cuneatim acutis 6–15(–26) cm longis, 4–7.5(–13) cm latis, supra praeter costam medianam puberulam glabris, subtus sparsim vel modice subadpresso-puberulis, costa media nervis lateralibusque modice puberulis pilis patentibus vel crispatis instructis, marginibus ciliatis; nervis lateralibus utroque latere 6–10 arcuato-adscendentibus in margines desinentibus; inflorescentia terminali axibus principibus vel saltem inferioribus umbellatim ramosis 2–3 cm longa (pedunculo inclusio), 2.5–5 cm lata pedunculata, pedunculo 5–25 mm longo, 1.5 mm diam. dense

tomentoso pilis patentibus 0.2–0.4 mm longis munito; inflorescentiae axibus 4–5 patentibus 7–12 mm longis dense brunneo-tomentosis; floribus subcapitatis in extremitatibus axium dispositis, floribus in quoque capitulo plurumque 10–13; capitulis a bracteis 4–7 lingulatis vel subspathulatis cucullatis apice rotundatis vel lato obtusis 4–5 mm × 1.5–2 mm carinatis extus modice puberulis cinctis; bractea principali sub quoque capitulo ligulata apice rotundata carinata 10 mm × 4 mm utrinque modice puberula; calyce hypanthioque 1.8–2 mm longo, hypanthio subgloboso hirsutulo pilis patentibus munito, calyce lobis quinque ovato-lanceolatis acutis 1–1.5 mm longis, 0.7–1 mm latis extus ad apicem hirsutulis, marginibus valde ciliatis intus glabris, basi sinu inter lobos 1-glanduliferis; corolla breviter infundibuliformi 6–6.5 mm longa extus puberula, tubo 3–3.5 mm longo basi 1.5–2 mm lato orificio 3 mm lato, lobis 5–6 lanceolatis, apice cucullato-incurvato attenuato 3 mm × 1–1.5 mm intus glabris, orificio intus dense villosa; antheris 5–6 linearibus 2 mm longis vix exsertis medio tubi insertis; florum longistylorum stylis 6.5–7 mm longis; disco exerto.

Subligneous plant 0.5 m tall, the young stems moderately to densely short brown-puberulous. Stipules moderately pubescent with short brown, ascending hairs, the sheath shorter than the teeth, 1.5 mm long, 3 mm wide, teeth lanceolate, acuminate, 2–2.5 mm long, 0.5–0.7 mm wide. Leaves broadly ovate or elliptic-ovate, acute at apex, cuneately acute at base, 6–15(–26) cm long, 4–7.5(–13) cm wide, glabrous above except the midrib puberulent, midrib and lateral nerves below moderately puberulous with spreading or crisp brown pubescence, elsewhere sparsely to moderately puberulous on surface with subappressed hairs, margins ciliolate; lateral nerves 6–10 each side, arcuately ascending, ending at margins. Inflorescence terminal, pedunculate, including peduncle 2–3 cm long, 2.5–5 cm wide, the main or lower axes umbellately branched; peduncle 5–25 mm long, 1.5 mm thick, densely tomentose with spreading hairs 0.2–0.4 mm long, axes of inflorescence 4–5, spreading, 7–12 cm long, densely brown-tomentose; flowers subcapitate at the ends of each axis, in groups mainly of 3 heads with 10–13 flowers in each group; heads subtended by 4–7 lingulate to subspathulate, rounded to broadly obtuse, cucullate bracts 4–5 mm long, 1.5–2 mm wide, carinate, moderately puberulous without, subglabrous within or sometimes puberulous; larger bract subtending the 3 groups ligulate, rounded at apex, carinate, 10 mm long, 4 mm wide, moderately puberulous both sides. Calyx and hypanthium 1.8–2 mm long; hypanthium subglobose-depressed, hirsutulous with spreading brown hairs, 0.5–1 mm high; calyx lobes 5, ovate-lanceolate, acute,

1–1.5 mm long, 0.75–1 mm wide, hirsutulous apically without, glabrous within, strongly ciliate, with 1 or sometimes 2 elliptical squamellae in the sinus between each calyx lobe within; disk exserted, about $\frac{1}{2}$ length of calyx lobes. Corolla white-creamy, short infundibuliform, 6–6.5 mm long, puberulous-pilosulous without, tube 3–3.5 mm long, 1.5–2 mm wide at base, 3 mm wide at orifice, densely villous within at orifice, base of lobes and upper part of tube; lobes 5–6, lanceolate, cucullate-incurved and attenuate at apex, 3 mm long, 1–1.5 mm wide, glabrous within; stamens 5–6, anthers linear, 2 mm long, barely exserted, inserted $\frac{1}{2}$ up tube; filaments 0.5 mm long; style exserted in long-styled flowers, 6.5–7 mm long.

This species is closely related to *P. brazoi* Steyermark., of northernmost Brazil (Serra da Neblina) and southeastern Colombia. From that taxon, *P. davidsae* differs in the following being more densely pubescent: stipules, peduncles, axes of the inflorescence, calyx, and hypanthium, and lower surface of the leaf blades; the petioles are shorter, the calyx lobes more densely ciliolate; the corolla more densely pubescent in the upper half of the interior and orifice. It affords me great pleasure to dedicate this species to Dr. Gerrit Davidse, Coordinator for the Missouri Botanical Garden of the joint exploration project with Venezuela.

***Psychotria plowmanii* Steyermark., sp. nov. TYPE:**

Venezuela. Amazonas: Atures, virgin rainforest along Río Cataniapo, 44–45 km SE of Puerto Ayacucho, 3 km downstream from dam site, 5°35'N, 67°15'W, 200–300 m, 9 May 1980, Steyermark, Davidse & Guanchez 122132 (holotype, VEN; isotype, MO). PARATYPES: Venezuela. Amazonas: Atures, bosque alto denso, a aproximadamente 2 km al suroeste del caserío San Pedro de Cataniapo, al suroeste de Puerto Ayacucho, 5°39'N, 67°11'W, 90–110 m, 1980, Guanchez 140 (VEN); hillside forest immediately behind "El Tobogán de la selva" camping area, 35 km S of Puerto Ayacucho, 85 m, 21 Feb. 1979, Plowman 7715 (F).

Frutex 1.5–2-metralis; foliis oppositis petiolatis, petiolis 6–9 mm longis glabris; stipulis in vaginam 2–4 mm longam, 3–6 mm latam extus glabram connatis, supremis late deltoideis obtusis dense albo-ciliatis 1.5 mm longis, vetustioribus apice truncatis; laminis chartaceis oblanceolatis vel elliptico-oblanceolatis apice

acutis vel acuminatis basi cuneatim acutis vel acuminatis 13–20 cm × 4–9 cm utrinque glabris, nervis lateralibus utroque latere 9–13 divaricatae adscendentibus ante marginem 2–4 mm anastomosantibus utrinque elevatis, venuis tertiaris grosse reticulatis subtus manifeste elevatis; inflorescentia terminali 1.5–3.5 cm longa, 2–4 cm lata pedunculata, pedunculo 2.5–4.5 mm longo, 1 mm lato minute sparsimque papillato-puberulo; inflorescentiae axibus quinque vel sex 6–11 mm longis, infimis patentibus vel reflexis longioribus quam superioribus multifloris; floribus sessilibus aggregatis ad extremitates ramulorum dispositis; bracteis subaxibus suborbiculari-ovatis subacute 0.8–1.5 mm longis ciliolatis calyce hypanthioque 1.2 mm longo, hypanthio breviter cylindrico 0.9 mm longo dimidia parte inferiore minute puberulenti, calycis tubo lobisque 0.3 mm longis, lobis quinque leviter deltoideis subobtusis minute papillato-ciliolatis, tubo sparsim minute papillato-puberulo; corolla cremosa infundibuliformi 3 mm longa, 0.7–1.3 mm lata extus glabra, tubo intus dimidia parte superiore dense pubescenti, lobis quinque lanceolatis obtusis apice cucullato-inflexis 1 mm × 0.7–0.9 mm; antheris oblongis 0.9 mm longis; pistillo 3 mm longo, stylo dimidio parte superiore sparsim papillato-puberulo.

Shrub 1.5–2 m tall. Stipular sheath 2–4 mm long, 3–6 mm wide, glabrous without, truncate or nearly so at the summit of older sheaths, uppermost sheath densely white-ciliate on border, uppermost stipule broadly deltoid, obtuse, 1.5 mm high. Leaves petiolate, petiole 6–9 mm long, glabrous; leaf blades oblanceolate to elliptic-ob lanceolate, acute to acuminate at apex, cuneately acute to acuminate at base, domatia absent in leaf axils beneath, 13–20 cm by 4–9 cm, glabrous; lateral nerves 9–13 each side, elevated both sides, divaricately ascending, anastomosing 2–4 mm from margin, tertiary venation coarsely reticulate, conspicuous and elevated below, impressed above and less conspicuous. Inflorescence terminal, about as broad as long, 1.5–3.5 cm long, 2–4 cm wide, many-flowered toward the apices of the lateral axes, with 5–6 axes, the lowest pair spreading to reflexed and longer than the upper ones, 9–11 mm long, papillate-puberulent; peduncle 2.5–4.5 mm long, 1 mm thick, slender, minutely and sparsely papillate-puberulent; flowers sessile; bracts subtending axes of inflorescence suborbicular-ovate, subacute, 0.8–1.5 mm long, ciliate. Calyx and hypanthium 1.2 mm long, hypanthium short-cylindric, 0.9 mm long, 0.5 mm wide, sparsely minutely puberulent in lower half; calyx tube and lobes 0.3 mm long, 1 mm wide, sparsely papillate-puberulent on calyx tube to glabrate; calyx lobes 5, shallowly deltoid, subobtuse, minutely papillate-ciliolate, 0.3 mm high, 0.4 mm wide; corolla creamy, infundibuliform, 3 mm long, basally narrowed to 0.7 mm

wide, expanded at the limb to 1 mm long and 1.3 mm wide at summit, glabrous without; corolla tube densely pubescent within midway at base of stamens; corolla lobes 5, lanceolate, obtuse at the cucullate inflexed apex, 1 mm long, 0.7–0.9 mm wide. Stamens 5, anthers oblong, attached 1 mm above base of corolla tube; style 0.6 mm long, rounded at apex, sparsely papillate-puberulent in upper half.

This taxon differs from *P. ventuariana* Standl. & Steyermark in the puberulent hypanthium and shorter inflorescence nearly as broad as long with fewer axes. From *P. coussareoides* Standl. it may be differentiated by the shorter corolla and shorter, differently shaped inflorescence with fewer axes.